

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number  
**WO 2005/002426 A1**

(51) International Patent Classification<sup>7</sup>: **A61B 1/24**

(21) International Application Number:  
PCT/IT2004/000383

(22) International Filing Date: 1 July 2004 (01.07.2004)

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:  
RI 2003 A 000005 2 July 2003 (02.07.2003) IT

(71) Applicant and

(72) Inventor: **GARGIULO, Vincenzo** [IT/IT]; Via Filippo Meda, 195, I-00157 Roma (IT).

(74) Agents: **FIAMMENGHI, Carlo** et al.; c/o Fiammenghi Fiammenghi, Via Quattro Fontane, 31, I-00184 Roma (IT).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

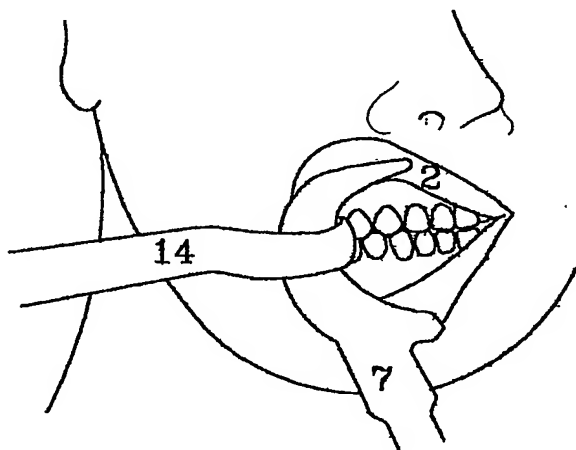
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **ANATOMICAL MINI-ILLUMINATOR FOR LINGUAL CAVITY**



(57) Abstract: Apparatus for the illumination of the vestibular/lingual cavity, having a symmetric couple of retractors (A, B) for the oral cavity. A set of point-like light sources are distributed on each retractor, said light sources corresponding to respective terminations - on the external surface of the retractor - of an optical fibre which is inclined by a specific angle with respect to the ideal plane of the closed set of teeth. In this manner it is possible to obtain a complete, uniform, and close illumination of the lingual and vestibular sides of each tooth. The couple of retractors is arranged on a support structure having an Y-configuration, which at the same time forms: I- the inlet element for the lower extremity of the optical fibres, the latter branching off on the first retractor (A) and the second retractor (B); ii- the regulation device used for adjusting the initial (normal) aperture of the retractor, the adjustment being performed by coupling the retractor to a semirigid small bow selected from an available set according to the typology of oral cavity on which the operation is performed and according to the type of operation.